

### **REMARKS**

This paper is filed in response to the official action dated August 13, 2008 (the official action). This paper is timely filed as it is accompanied by a petition for extension of time and authorization to charge our credit card account in the amount of the requisite fee. The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith to our Deposit Account No. 13-2855, under Order No. 30740/285902.

All pending claims 1, 4, 7, 10, 13, 14, 17, 23, 27, 28, and 30-33 have been variously rejected as obvious over U.S. Patent 6,424,326 to Yamazaki (“Yamakazi”) in view of U.S. Patent No. 5,594,463 to Sakamoto (“Sakamoto”) and applicants’ assertedly admitted prior art (“AAPA”).

Additionally, it was suggested that the specification be amended to include section headings. In response, the applicants propose to amend the application to include such section headings upon receiving an indication that the application claims are allowable, if required by the examiner.

The claim rejections are addressed below in the order presented in the official action. Reconsideration of the application, as amended and in view of the following remarks, is solicited.

### **CLAIM REJECTIONS – 35 U.S.C. §103**

All pending claims 1, 4, 7, 10, 13, 14, 17, 23, 27, 28, and 30-33 have been variously rejected as obvious over U.S. Patent 6,424,326 to Yamazaki (“Yamakazi”) in view of U.S. Patent No. 5,594,463 to Sakamoto (“Sakamoto”) and applicants’ assertedly admitted prior art (“AAPA”). The applicants respectfully traverse the rejections.

### **CLAIMS 1, 4, 7, 10, 13, 14, 17, 23, 27, 28, 30, AND 31**

As an initial matter, it is respectfully submitted that Yamazaki describes a voltage-driven display — not a current-driven display, as claimed. In a voltage-driven display, the voltage on the gate connection of the drive transistor sets the pixel brightness whereas the pixel brightness is set by an adjustable constant current in a current-driven display. Thus, these two types of display operate in different, mutually incompatible ways; moreover, such differences are reflected in the pending claims. Accordingly, certain features referred to by the Office as being disclosed by Yamazaki are not in fact present

therein (this is not surprising — one of ordinary skill would not expect such features to be present in a voltage driven display; rather, it would be surprising if they were present).

Figure 1 of Yamakazi shows a display portion 101 of the EL display with a sensor portion 106 to one side of the display. Details of the pixel driver circuits for these two portions of the display (101 and 106) are shown in figure 2. The pixel driver circuit relied upon by the Office in rejecting claims 1, 4, 7, 10, 13, 14, 17, 23, 27, 28, 30, and 31, and shown in figure 3, is specific to the sensor portion 106 of the display. The only constant current generators shown in Yamazaki are current generator 137 and 737 shown in figures 3 and 15, respectively, but they are not for driving a row or column of the display, as recited in claims 1, 4, 7, 10, 13, 14, 17, 23, 27, 28, 30, and 31. Instead, current generators 137 and 737 are part of the sensor output wiring of the sensor pixels illustrated in figures 3 and 15 (*see*, for example, Yamakazi at column 6, lines 63-65, and column 26, lines 59-61, respectively). Thus, Yamazaki does not show a display driver comprising “a plurality of adjustable constant current generators each for driving a row or column of said display,” as recited in claims 1, 4, 7, 10, 13, 14, 17, 23, 27, 28, 30, and 31.

At page 4 of the action, the Office refers to drive field effect transistor 131 of figure 3 of Yamazaki as being *both (i)* a drive FET of the pixel driver circuit and *(ii)* a constant current generator for driving a row/column of the display, as recited in 1, 4, 7, 10, 13, 14, 17, 23, 27, 28, 30, and 31. It is respectfully submitted that this single transistor cannot be both a drive FET and a constant current generator at the same time. Moreover, it is respectfully submitted that the driving transistor 131 is clearly not a constant current generator.

Furthermore, the Office refers to elements 134, 135, 136 of figure 3 as being a display element brightness controller, but even if a very broad interpretation is given to the meaning of “brightness controller” (which meaning would need to encompass a sensor, which is what elements 134-136 comprise), these elements are not controlling a plurality of adjustable constant current generators as recited in claims 1, 4, 7, 10, 13, and 14. Again, the display disclosed by Yamazaki is voltage — not current-driven.

Moreover, at page 4 of the action, the Office asserts that light receiving diode 136 of Yamakazi is *both (i)* a current sensor and *(ii)* a display element brightness controller. As explained in Yamazaki, light receiving diode 136 is for detecting luminance, not

current. Luminance detection is fundamental to the operation of Yamazaki. For example, Yamakazi discloses that:

The deterioration of the EL material of the EL layer has become a problem in the realization of the EL display, which leads to the reduction in the luminance of the EL element.

The EL layer deteriorates even if a constant voltage from a pair of electrodes is applied thereto, whereby the luminance of the EL element is reduced. Thus, an image displayed on the EL display is not clear because of the reduction in the luminance of the EL element.

See Yamakazi at column 2, lines 12-14 and 24-26, respectively. Accordingly, Yamakazi is concerned with providing “an EL Display capable of performing a clear and desirable color display by suppressing a reduction in luminance of an EL element *even if an EL layer is deteriorated*” (see Yamakazi at column 2, lines 53-57). Yamakazi purports to solve this problem of reduced luminance (and thus clarity of a displayed image) by providing an EL display having “a sensor portion for detecting a luminance ... and revising the luminance to a desirable value,” wherein the sensor pixel(s) is “composed of an EL element and a light receiving diode that detects the amount of change in the luminance of the EL element” (see Yamakazi at column 2, line 58-67). In other words, it is fundamental to the approach of Yamazaki that luminance is detected because Yamazaki contemplates that the luminance of the EL element can change even when the drive is constant (due to deterioration/aging of the EL material). It is respectfully submitted that a skilled person would not discard this core teaching of Yamazaki, and thus that element 136 cannot be equated with a current sensor, as asserted by the examiner.

It is further noted that Yamazaki teaches that the electrical potential of the power source supply lines is increased (rather than reduced, as recited in claims 1, 4, 7, 10, 13, 14, 17, 23, 27, 28, 30, and 31), so as to supplement the reduction in luminance, to thereby enhance the luminance of the EL element (and compensate for deterioration / aging of the EL material of the EL layer). See, for example, column 12, lines 50-55.

Sakamoto describes a passive matrix rather than an active matrix display, as claimed. The skilled person understands that drive techniques for these two types of display are entirely and fundamentally different. It is therefore respectfully submitted that the skilled person would not attempt, or be able, to combine the teachings of these two documents in any meaningful way.

It is also respectfully submitted that Sakamoto is fundamentally incompatible with Yamazaki because Sakamoto describes a current driven display whereas Yamazaki describes a voltage driven display, and these two types of display are mutually incompatible. Even if the skilled person were to attempt to derive something useful from the teachings of Sakamoto and apply them to the display of Yamakazi, it is submitted that the skilled person would not discard the core teaching of Yamazaki — that is, to use a luminance sensor (a light receiving diode). Additionally, Sakamoto makes no reference to the compliance of an adjustable constant current generator driving the display, and has not recognized the advantages associated therewith.

It is therefore respectfully submitted that the outstanding obviousness rejections of claims 1, 4, 7, 10, 13, 14, 17, 23, 27, 28, 30, and 31 should be removed.

### **CLAIMS 32 AND 33**

It is respectfully submitted that the skilled person would not combine the teachings of Yamazaki and Sakamoto for the reasons given above. Still further, and contrary to the Office's assertion at page 16 of the action, Sakamoto does not teach or suggest "a power controller being configured to reduce said power supply voltage in response to said sensed voltage such that said gate connection voltage of a brightest said pixel has decayed sufficiently to switch said brightest pixel off at the end of a driving cycle of said display," as recited in claims 32 and 33. Indeed, the passive matrix display of Sakamoto is fundamentally different to an active matrix display, as claimed, as there is simply *no concept of active matrix pixels in which a brightness decays* because the Sakamoto display is a scanned display in which pixels are either on or off.

Accordingly, it is respectfully submitted that there is nothing in the applied prior art to either teach or suggest: "a power controller coupled to said voltage sensor for controlling an adjustable voltage power supply to provide an adjustable voltage to said electroluminescent display to power said drive transistors for driving said pixels, said power controller being configured to reduce said power supply voltage in response to said sensed voltage such that said gate connection voltage of a brightest said pixel has decayed sufficiently to switch said brightest pixel off at the end of a driving cycle of said display."

In view of the above comments, a *prima facie* case of obviousness cannot be sustained and thus the outstanding obviousness rejections of claims 32 and 33 should be removed.

In the view of the amendments and the foregoing discussion, the applicants submit that the rejections have been overcome and should be withdrawn.

**CONCLUSION**

Should the examiner wish to discuss the foregoing, or any matter of form or procedure in an effort to advance this application to allowance, he is urged to contact the undersigned attorney.

Respectfully submitted,

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